

How do I create an animated gif from still images (preferably with the command line)?

Asked 10 years, 5 months ago Modified 4 months ago Viewed 262k times



I want make a .gif animated picture from a given set of .jpg pictures.

185

I would prefer to do it from the command line, so command line tools would be very welcome.



command-line

image-processing

gif



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edited Feb 3, 2019 at 17:39

asked Jul 14, 2015 at 10:57



pomsky

70.9k

23

251

257



Maythux

87.6k

56

247

282

- 3 Works, very memory hungry though. There are LOADs of potential dupes though:
askubuntu.com/questions/648244/... askubuntu.com/questions/457351/...
askubuntu.com/q/573712/178596 askubuntu.com/questions/566476/...
askubuntu.com/questions/380875/... askubuntu.com/q/636149/178596 – Wilf Jul 14, 2015 at 11:48

Sorted by: Highest score (default)

command:

g) using:

7:32

answered Jul 14, 2015 at 10:57



Maythux

87.6k

56

247

282

50%. Etc -resize 50% .

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- 3 Ubuntu 18.10 failed with "cache resources exhausted" for these images:
github.com/cirosantilli/media/blob/master/... related: superuser.com/questions/1178666/...
– [Ciro Santilli OurBigBook.com](#) Dec 23, 2018 at 16:40

ImageMagick users will likely also want: `-deconstruct` . I have also found that ImageMagick is very memory hungry, see benchmarks: askubuntu.com/a/1102183/52975 – [Ciro Santilli OurBigBook.com](#) Dec 23, 2018 at 17:48

`convert -delay 0 -loop 0 *.tif myanimated.gif` worked nicely, on 720 tif files – [ron](#) Jul 17, 2019 at 15:34

- 2 The comment by @CiroSantilli新疆再教育营六四事件法轮功郝海东 has links that solve the `cache resources exhausted` problem. However, I would love to understand why creating a measly 1.7MB GIF would require more than 1GB (which is the default in the `policy.xml` file) in `cache resources` – [ijuneja](#) Nov 27, 2021 at 18:44



To complete @Maythux answer:

84 To avoid generating a very large file, you can use `-resize` option:



In my case, I have 4608x3456 images and the generated gif was more than 300M for 32 images



```
convert -resize 20% -delay 20 -loop 0 *.jpg myimage.gif
```



or

```
convert -resize 768x576 -delay 20 -loop 0 *.jpg myimage.gif
```

You may generate a gif with unsorted pics.

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As the shots were taken very quickly (10/s) they all have the same modification time and you can't trick using `ls -t` for example. On ubuntu you can use `ls -v` instead, something like:

```
convert -resize 768x576 -delay 20 -loop 0 `ls -v` myimage.gif
```

Sorting numerically is quite tricky on Mac OS X though, I guess you'll need to build a custom script.

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answered Apr 16, 2016 at 9:28



Alain

1,074 8 11

-
- 8 You can avoid your *.jpg issue by forward padding numbers with zeros. "01.jpg" instead of "1.jpg", and so on. If you get to triple digits, then "001.jpg", "010.jpg", etc. – [bigreddmachine](#) Nov 28, 2016 at 23:53
-
- 2 There are several ways around the filename sequence problem. Including `find`, `sort`, brace expansion, and so on. The `ls` tool is notoriously unsuitable for this kind of thing. Use `find`. There's a bit of a learning curve, but it's worth it. – [voices](#) Jan 23, 2017 at 16:28 ✎

Some users might be interested in editing filenames with massren: github.com/laurent22/massren
– [Graham P Heath](#) Nov 30, 2017 at 22:09

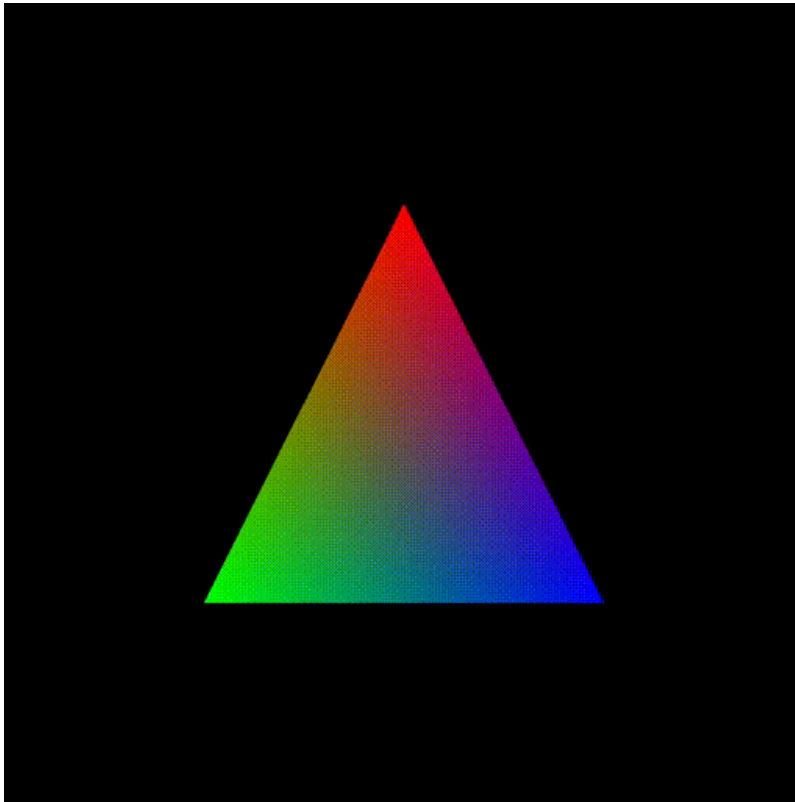
it takes ages to finish. Is there a verbose option? – [ouranos](#) Jul 18, 2019 at 16:19

-
- 2 If the input has a transparent background, I would also recommend the `-dispose Background` option. (I realize OP's post is about jpeg images which cannot have transparent backgrounds, but just in case anyone finds this answer via Google, like I did). By the way, regarding the `ls` sorting, you could always do some bash script hacking inline, e.g.: `$(for f in `seq 0 10`; do printf "21-33-26_$.jpg\n"; done)` – [Daniel](#) Oct 31, 2022 at 21:46 ✎

0-8, I have found that ffmpeg is much

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```
wget -O opengl-rotating-triangle.zip  
https://github.com/cirosantilli/media/blob/master/opengl-rotating-triangle.zip?  
raw=true  
unzip opengl-rotating-triangle.zip  
cd opengl-rotating-triangle
```

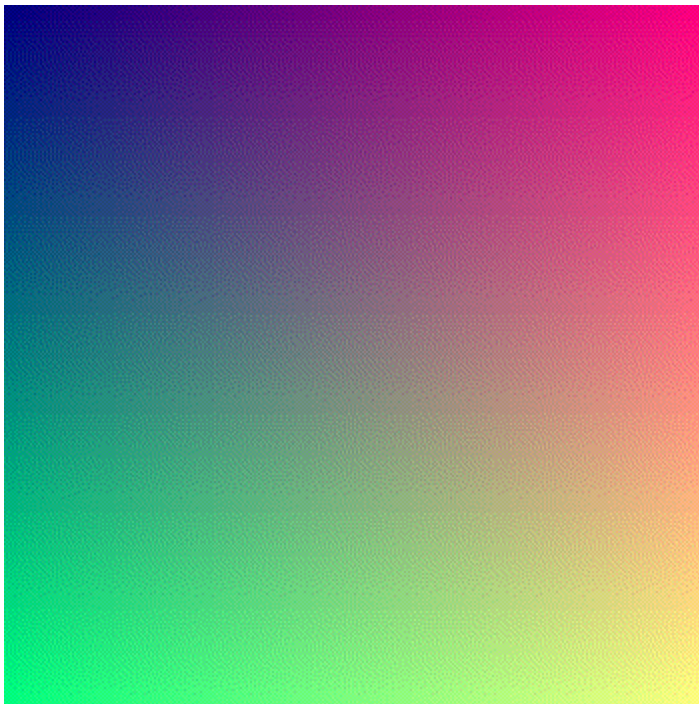


The test data was generated with: <https://stackoverflow.com/questions/3191978/how-to-use-glut-opengl-to-render-to-a-file/14324292#14324292> and contains 256 1024x1024 PNG images.

ctly in your browser right now!

[rt-html5-canvas-sequence-to-a-video-](#)

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The important `ffmpeg` options I want to highlight are:

- `-pattern_type glob` : convenient way to select images
- `-framerate 60` : assume 60 FPS on input images, and output the same FPS.

`ffmpeg` cannot know otherwise, since there is no FPS data in images as there is in video formats.

The 256 input frames take about 4 seconds to finish.

`-r 15` : optional. Pick one every 4 images so reduce size ($4 == 60 / 15$).

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is only 64 frames.

d to make things match.

eight proportionally, usually to reduce size

[stions/24961127/how-to-create-a-video-](https://stackoverflow.com/questions/24961127/how-to-create-a-video-)

[n MP4 video via command line?](#)

k and memory limits at

[ck-convert-quits-after-some-pages](#)

I compared the commands:

```
/usr/bin/time -v convert *.png -deconstruct -delay 1.6 out-convert.gif
/usr/bin/time -v ffmpeg \
  -framerate 60 \
  -pattern_type glob \
  -i '*.png' \
  out-ffmpeg.gif \
;
```

The commands were constructed to produce outputs that are as close as possible to make the comparison valid:

- `/usr/bin/time -v`: used to find the maximum memory usage as explained at: <https://stackoverflow.com/questions/774556/peak-memory-usage-of-a-linux-unix-process>
- `-deconstruct`: GIF images can contain just the minimal modified rectangle from the previous frame to make the GIF smaller.

`ffmpeg` calculates those diffs by default, but `ImageMagick` does not, unless `-deconstruct` is used.

You will basically want to use that option every time with `ImageMagick`.

We can observe the difference with:

```
identify out.gif
```

With the compressed version, all frames have smaller sizes than the initial one, e.g.:

```
out.gif[0] GIF 1024x1024 1024x1024+0+0 8-bit sRGB 256c 16.7865MiB 0.010u 0:00.010
out.gif[1] GIF 1024x1024 1024x1024+0+0 8-bit sRGB 256c 16.7865MiB 0.010u
out.gif[2] GIF 1024x1024 1024x1024+0+0 8-bit sRGB 256c 16.7865MiB 0.010u
```

instead of the full 1024x1024, and is just the middle triangle.

[g ImageMagick?](#)

Should not matter for conversion

ally identical.

.16

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and for ffmpeg:

```
Elapsed (wall clock) time (h:mm:ss or m:ss): 0:04.41
Maximum resident set size (kbytes): 97172
```

from which we see that:

- ImageMagick used 2.6Gb of RAM and took about 1 minute
- ffmpeg used 100Mb of RAM and took 4 seconds

Test hardware: Lenovo ThinkPad [P51 laptop](#), Intel Core i7-7820HQ, 32GB(16+16) DDR4 2400MHz SODIMM, 512GB SSD PCIe TLC OPAL2.

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edited Sep 16, 2020 at 6:16

answered Dec 15, 2018 at 20:52



Ciro Santilli
OurBigBook.com

31.8k 14 130 122

2 Upvoted and liked!, great answer, I have one small follow up question. I have not so much high quality images, and i did not use `-r` and `-v` commands, still the output gif is of much lower quality than original png files. How to keep the same quality of gif as given png files? – [BhishanPoudel](#) Apr 10, 2019 at 2:27

Hi @astro123 how is the quality lower? Smaller image size, or less frames, or something else (GIF uses lossless apparently, so can't be worse compression)? Try `-framerate 60 -r 60`. Inspect the generated GIF and input images with ImageMagick tools like `identify` to try and figure out what is going on.
– [Ciro Santilli OurBigBook.com](#) Apr 10, 2019 at 8:32

1 I would strongly recommend using `palettegen` and `paletteuse` to get much better quality and lower
`[b];[a] palettegen [p];[b][p]`
`eg` does not support transparent backgrounds,
[Daniel](#) Oct 31, 2022 at 21:39

cases. You will also always lose quality for
the fact that GIF only supports 256 colors

enough courage to properly modify the answer
ent. – [Ciro Santilli OurBigBook.com](#) Aug 19 at

to get your shell to expand file names

```
}}.jpg output.gif
```

7:15

answered Jul 27, 2017 at 18:52

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Ciro Santilli
OurBigBook.com

31.8k 14 130 122



shanksk
401 4 3



GIMP

22

You can easily do this with GIMP. First install it if it's not installed already with

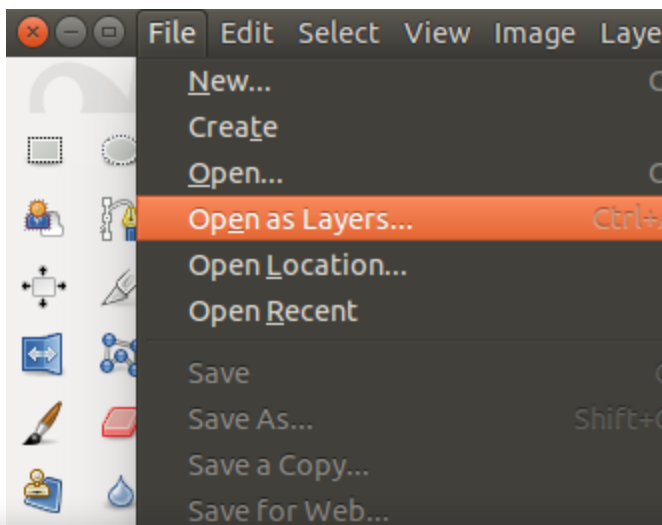


```
sudo apt-get install gimp
```



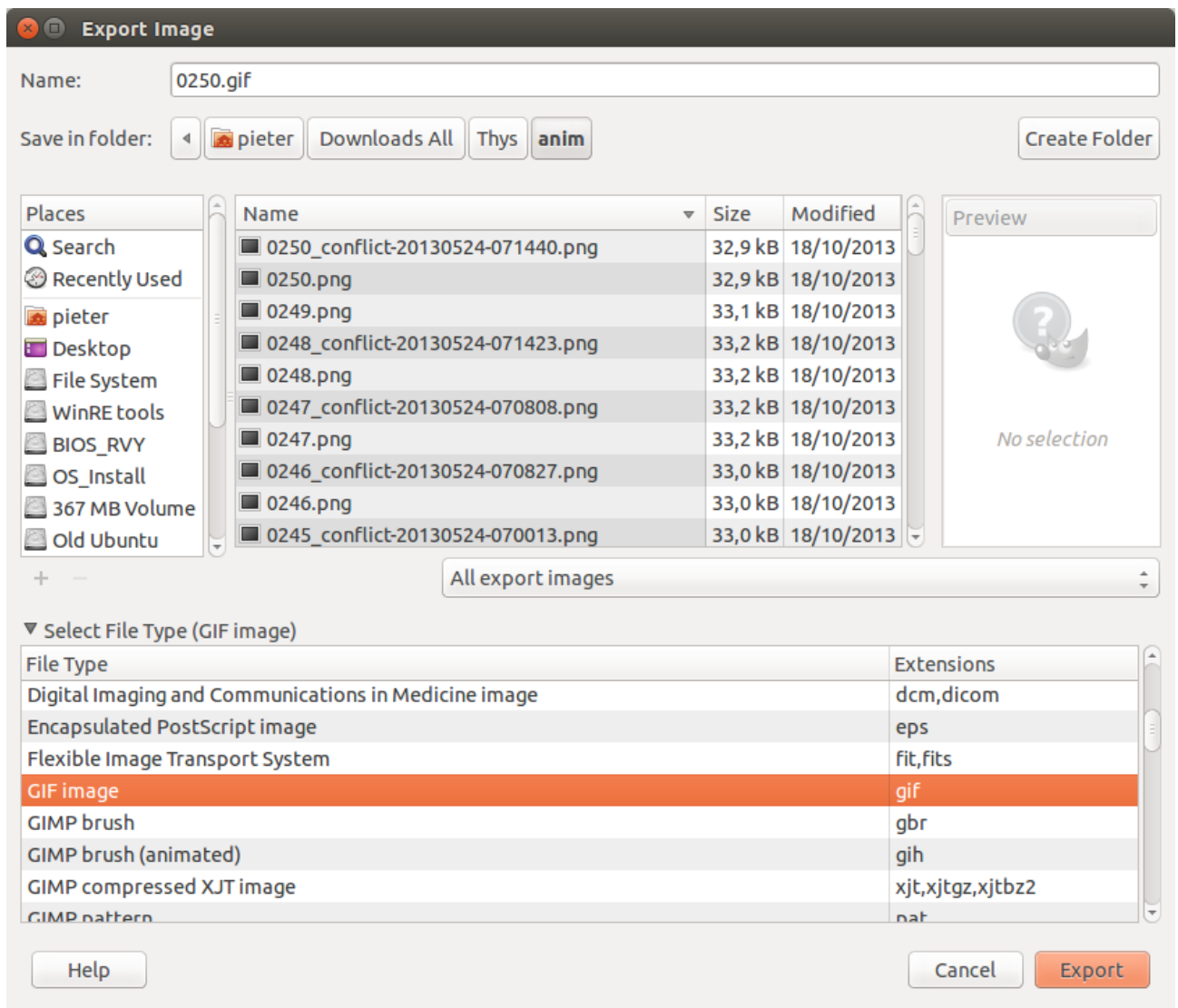
Creating the gif

From GIMP go to **File** -> **Open as Layers** to open all the png's on their own layer.



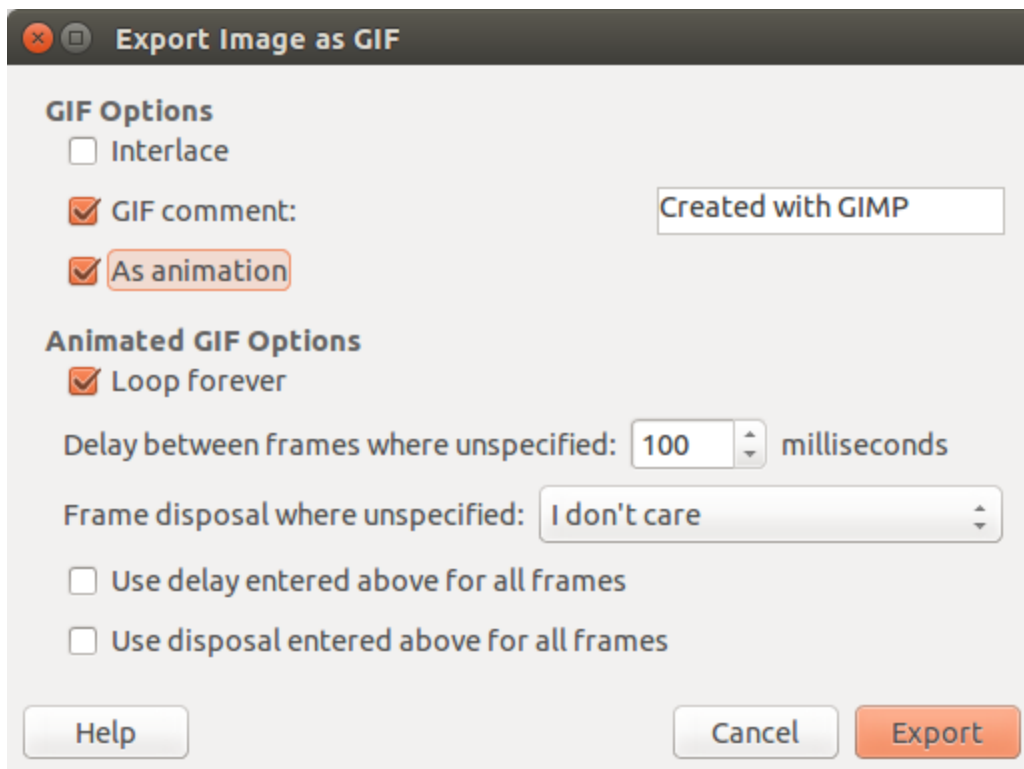
After that, go to **File** -> **Export As**. From the

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From there you will go to the GIF export options. Tick the 'As Animation' option and set the

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To change the delay between frames

Modify the name of the layers, and include the delay in milliseconds between parentheses, like this: (1500ms)



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'layback".

9:33

answered Apr 29, 2014 at 4:53



chesedo

119 188

1,749 1 14 25

8, 2022 at 19:44

imagemagick package. It is command line software center, or go to a command



```
sudo apt-get install imagemagick
```



Now to create the .gif.



```
convert -delay 100 -size 100x100 xc:SkyBlue \  
    -page +5+10 balloon.gif -page +35+30 medical.gif \  
    -page +62+50 present.gif -page +10+55 shading.gif \  
    -loop 0 animation.gif
```

*Note the above example is straight from [Image Magick Examples](#)

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edited Feb 3, 2019 at 16:03

answered Apr 29, 2014 at 0:15



pomsky

70.9k 23 251 257



Scott Goodgame

2,646 16 20

1 How do I do 40 PNG images in a looping GIF? All in folder /home/fusion809/Documents/Images

– Josh Pinto Apr 29, 2014 at 0:55

3 @BH2017: convert -delay 20 -loop 0 *.png out.gif makes a looping GIF. – unutbu Dec 24, 2018 at 0:22



just use **ffmpeg** on the command line, it comes preinstalled on Ubuntu, Kubuntu, Debian and other linux

2

```
ffmpeg -f concat -i list.txt output.gif
```



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answered Nov 25, 2023 at 1:53



user12711

265 2 9

terms of durations for each frame. But lines
25, 2024 at 11:06

ent durations, so I was considering to discard
with ImageMagick. Now I will have to give it a



1



To add something, you'll probably end with a huge GIF file with the `convert` variant proposed.

As [this](#) answer in StackOverflow states, it's convenient to optimize the resulting GIF with something like the following:

```
mogrify -layers 'optimize' -fuzz 7% mygif.gif
```

With this I'm getting about 1/50 times the original size.

I've been getting trouble with the resources assigned to ImageMagick. [This](#) post can be helpful if it's the case.

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edited Oct 27, 2022 at 21:00

answered Oct 27, 2022 at 20:58



Alfredo Tostón

111 5



0



I suggest you use the same `convert` command, but make sure to include `-dispose Background` to clear the canvas before adding the next frame. It looks like the following:

Update: `convert` is now deprecated, use `magick` instead

```
magick -delay 100 -dispose Background -loop 0 *.jpg animation.gif
```

answered Oct 13, 2023 at 22:18



Mohamed Moghairib

133 4

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answer but it's a bit over complicated

m at and use leading zeroes (e.g.

merge them into a gif.

```
ffmpeg -i %04d.png out.gif
```

This is the simplest way, however there is an incredible amount of nuance to getting it right.

The `-r` option sets the playback rate, increasing this number will create a fast-forward like effect, and decreasing it will do the opposite.

To control the actual fps you need to use `-vf fps=50` (50 is the highest framerate supported by GIFs in most cases)

And `-vf scale=-1:480` will scale the image to 480p, combining that a more advanced command would look like this.

The `-sws_dither` flag will control dithering when not using the paletteuse filter, the only options of note are `ed` and `bayer`, the rest always produce garbage for me.

```
ffmpeg -r 24 -i %04d.png -vf fps=12,scale=-1:360:flags=lanczos -sws_dither bayer out.gif
```

This will take a 24fps animation, and play it back at 12fps (so every other frame gets cut to maintain a 24fps playback rate) and rescale it down to 360p using the lanczos scaling algorithm.

It will also use bayer dithering (instead of the default `ed` dithering) which will generally make your files smaller compared to alternatives without any meaningful loss of quality.

If you want to learn more about controlling a gif's quality and size, as well as a way to choose other dither patterns I have another answer where I go into detail about it:

[How to convert a video to gif using ffmpeg with-](#)

answered Aug 18 at 18:28



Cestarian

301 3 7

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